

Claims:

1. A method for producing a mutacin comprising:
 - (a) growing a mutacin-producing cell in a liquid medium under conditions in which mutacin is produced, wherein the liquid medium comprises yeast extract, peptone, sucrose, and salts; and
 - (b) isolating mutacin from the liquid medium.
2. The method of claim 1, wherein the liquid medium comprises 10-60 g yeast extract, 10-60 g peptone, and 10-50 g of a carbon source (weight/liter).
3. The method of claim 2, wherein the carbon source is selected from the group consisting of glucose, fructose, lactose, and sucrose.
4. The method of claim 3, wherein the liquid medium comprises 30 g yeast extract, 20 g peptone, and 20 g sucrose per liter.
5. The method of claim 1, wherein the salt content comprises K_2HPO_4 , NaCl, $MgSO_4$.
6. The method of claim 5, wherein the salt content comprises 0.5-10 g K_2HPO_4 , 1-15 g NaCl, and 0.1-20 g $MgSO_4 \cdot 7 H_2O$
7. The method of claim 6, wherein the liquid medium comprises 2 g K_2HPO_4 , 2 g NaCl, and 1 g $MgSO_4 \cdot 7 H_2O$ per liter.
8. The method of claim 4, wherein the liquid medium comprises 30 g yeast extract, 20 g peptone, 20 g sucrose 2 g K_2HPO_4 , 2 g NaCl, and 1 g $MgSO_4 \cdot 7 H_2O$ per liter.
9. The method of claim 1, wherein the mutacin produced is mutacin I and/or mutacin III.
10. The method of claim 1, wherein the mutacin-producing cell is a *Streptococcus mutans* cell.

11. The method of claim 10, wherein the *Streptococcus mutans* cell is *Streptococcus mutans* UA787 and/or *Streptococcus mutans* CH43.
12. The method of claim 1, wherein the conditions under which mutacin is produced are anaerobic liquid culture conditions under which fermentation proceeds.
13. The method of claim 12, wherein mutacin fermentation may be conducted in a bioreactor at a cultivation temperature of between 35-42° C.
14. The method of claim 13, wherein the cultivation temperature is maintained at 37° C.
15. The method of claim 12, wherein the fermentation is conducted with an agitation rate of between 50-250 rpm.
16. The method of claim 15, wherein the agitation rate is 150 rpm.
17. The method of claim 12, wherein the initial pH is between about 3.0-7.2
18. The method of claim 17, wherein the initial pH is about 5.6.
19. The method of claim 18, wherein the pH is maintained at 5.6 throughout fermentation.
20. The method of claim 1, wherein mutacin is isolated from the liquid culture after fermentation by removal of cells from the fermentation broth to obtain a cell-free liquid culture.
21. The method of claim 20, wherein the fermentation broth is centrifuged to obtain a cell-free fraction, extracted with chloroform, and the emulsion layer formed between the chloroform and aqueous phases centrifuged to isolate a pellet comprising mutacin.